DOCUMENT RESUME

ED 035 167 EF 000 824

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TITLE	New Plans for School Building Design.
INSTITUTION	New York State Education Dept., Albany. Div. of Educational Communications.; State Univ. of New York, Albany.
PUB DATE	65
NOTE	3p.; Paper presented at New York State Convention on Educational Communications (Nov. 22-25, 1964)
EDRS PRICE	EDRS Price MF-$0.25 HC-$0.25
DESCRIPTORS	*Audiovisual Instruction, *Classroom Communication, *Higher Education, *Instructional Aids, *Large Group Instruction

ABSTRACT

The use of the Communication Center to make higher education more efficient and more effective is discussed. The development and increased use of instructional aids and media can make large group instruction more effective and can present more information than an instructor can present alone. This program has greatly expanded and is coordinated, promoted, and supported by Rensselaer's Office of Institutional Research. There is a continuous process of experimentation and evaluation. From these experiments, rooms have been designed to carry on specific programs, and at the heart of this program is the instructional media center. (RK)

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NEW PLANS FOR SCHOOL BUILDING DESIGN

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Rensselaer's proposed Communication Center is in response to the problem of rendering the instructional processes in higher education more efficient, and more effective, than they have been in the past. The great concern with efficiency and effectiveness is basically a contemporary problem; likewise, the Communication Center is a contemporary solution resulting in a completely new educational building type.

A single faculty member face-to-face with a few responsive students in a tutorial relationship has been an ideal of educational processes, but it is an unrealistic goal for a large percentage of a college's instructional load. Four concerns of contemporary higher education have rendered the ideal impossible:

1. Shortage of faculty - The problems of attracting competent new faculty members while retaining existing faculties in face of the competition from other segments of business and industry is a severe problem, particularly for a technically-oriented school such as Rensselaer.
2. Increased enrollments - Not only are there more college age people, but a higher percentage of them are availing themselves of the opportunities for higher education. Rensselaer feels the demands, even though admissions can be limited.
3. Increased costs - Every aspect of higher education from feeding the student to placing a book on the library shelf has increased requiring commensurate raises in tuition and fees. At the same time, there is expanded competition from many areas of society for financial resources so there is great concern with the cost of educating a student. As a private institution, Rensselaer is particularly concerned with educational costs.
4. Expanded and more complex body of knowledge - There is more to teach, more to learn, and it is a more complex and involved body of knowledge that requires carefully planned and executed instruction, especially at Rensselaer with its particular type of program.

Faced with a shortage of faculty and an increase in enrollments, coupled with rising costs and more competition for resources, it is logical for a school or university to turn to large group instruction to handle part of its instructional task. Large group instruction, and the large group can range from 50 to many hundreds of students, allows the most proficient faculty to reach the most students simultaneously. From that standpoint, it is an efficient way to communicate, to inform, and to transmit knowledge.

However, large group instruction may not be particularly effective in stimulating learning responses among the large groups of students involved. This is certainly due in part to the reduction of contact, and hence motivation, between student and instructor.

EF 000 824

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The development and increased use of instructional aids and media can render large group instruction more effective and it can further increase its efficiency by permitting the presentation of more information than that which an instructor can present alone. Motion pictures, slides, filmstrips and loops, audio and video tapes, models and demonstrations, overhead projection, and television can all be employed singly or in combinations, and each in many different ways, to further render large group instruction more effective, as well as more efficient.

For a number of years, Rensselaer has been exploring the opportunities afforded by large group instruction coupled with careful utilization of aids and media. Experiments in teaching a variety of courses ranging from physics to psychology have taken place in remodeled large classrooms and lecture halls around the campus. All the experimental programs have involved the use of instructional aids and media, and several have been conducted not in a single large space, but in several large spaces inter-connected through the use of television. The experiments with television have resulted in the development of studio and coaxial cable facilities on the campus.

The greatly expanded use of aids and media has been coordinated, promoted, and supported by Rensselaer's Office of Institutional Research. Starting out as Project Reward a number of years ago, the Office has grown and expanded until it now offers film, slide, tape and graphic art services, television production, and multi-media consultation, as well as typical institutional research function in support of the teaching faculty and administration. An old chapel two blocks from the campus currently inadequately houses the very important functions of the Office of Institutional Research.

Obviously, experimentation with effective and efficient large group instruction involves consideration of adequate facilities and space, and the two concerns have been explored together at Rensselaer. The Troy 101 Project showed how a large classroom could be converted to a completely adequate multi-media large group space seating about 150 students and permitting the implementation of one important television experiment. The Educational Facilities Laboratories - sponsered study called Project DASFEE (Design of Auditorium Studio Facilities for Engineering Education) explored in detail the planning considerations and design criteria for large group, multi-me ia instructional facilities. The project was conducted and its report "New Spaces for Learning" was prepared by Rensselaer's School of Architecture. With the completion of that study, the School of Architecture then undertook the design, the construction, and evaluation of a mock-up large group classroom following the principles laid down in "New Spaces". The Experimental Classroom has been in operation for over three years and has allowed the Rensselaer faculty to experiment and restructure courses towards improving them for large group instruction by utilizing aids and media.

These experiments have taken place in a facility specifically designed to permit the faculty to make the most extensive possible use of the new technologies. In addition, the Experimental Classroom has allowed the architectural research staff to further evaluate and refine the design of such large spaces, and has permitted education research as to the effectiveness of this type of instructional process. Through the Educational Research Council the process of experimentation and evaluation goes on.

From this brief review, it can be seen that Rensselaer has been deeply involved in the processes and facilities fro large group instruction and has amassed enviable experience on groupings, courses, aids and media, support services, and facilities. All of these things are part of the instructional processes and life of the campus. The program for the Communication Center was based on meeting these needs and the competition reported in "New Building on Campus" was undertaken to bring the talents of six architectural firms to bear on the problem. The concept and rorm of the Center has been based on real needs defined and defined through research, and interpreted by the architectural talents of six outstanding firms. It is a building ready for realization.

The large group classrooms in the Communication Center seat a total of 1050 students in four rooms of 150 students each and one room of 450. The requirements of shape, seating, lighting, climate, furniture, access and circulation, and equipment for these rooms were developed through the architectural studies previously mentioned. By inclusion of preparation and projection areas each room further supports the use of all media and aids in a variety of combinations and also provides facilities for equipment and technical staff. The rooms allow the instructor wide latitude in designing and structuring instruction to best meet the needs of his course without imposing undue burdens and restraint on his time and energies. They are rooms designed to reduce the frustration normally associated with technology and large groups.

The capacities for these rooms were determined by analyzing the supply and demand of instructional facilities on the campus as shown by records from the Registrar's office at the time of developing the competition program. Now over three years later, a disposition of sizes would again be analysed before final working drawings are undertaken. It may well be that a different arrangement of group sizes would better meet Rensselaer's present and future needs. The building permits combinations of rooms in the center, or existing spaces about the campus, to be interconnected by television for multiple large group instruction. This, in itself, allows a high degree of flexibility of use and eliminates the restrictions in utilization imposed by a single, very large facility.

The production facilities will house the important instructional support activities of the Office of Institutional Research. The studios and control rooms, offices and conference areas, laboratories and shops, have all been programed to meet the specific needs of Rensselaer both in providing services for those teaching in the Communication Center and for those teaching in remodeled classrooms and lecture halls around the campus. In this sense, it is not a self-contained building, but its functions will influence instruction and its cables and services will reach out to every corner of the campus.

In keeping with the vital role it will play, the Communication Center will be located centrally on the academic campus. Here, it will be most convenient for the large numbers of students and faculty who move to and from it during the school day. It is a large and costly building, but it is a vital building worthy of realization as part of Rensselaer's answer to the concerns of higher education; specifically, it is part of Rensselaer's response to the important problem of rendering instruction, and hopefully learning, more efficient and effective.